



ANTHONY VEDER

NAVIGATING THE FUTURE



Björn van de Weerdhof
Manager Business and Fleet Development

INTEGRATED SHIPOWNER



PEOPLE



COMMERCIAL OPERATION

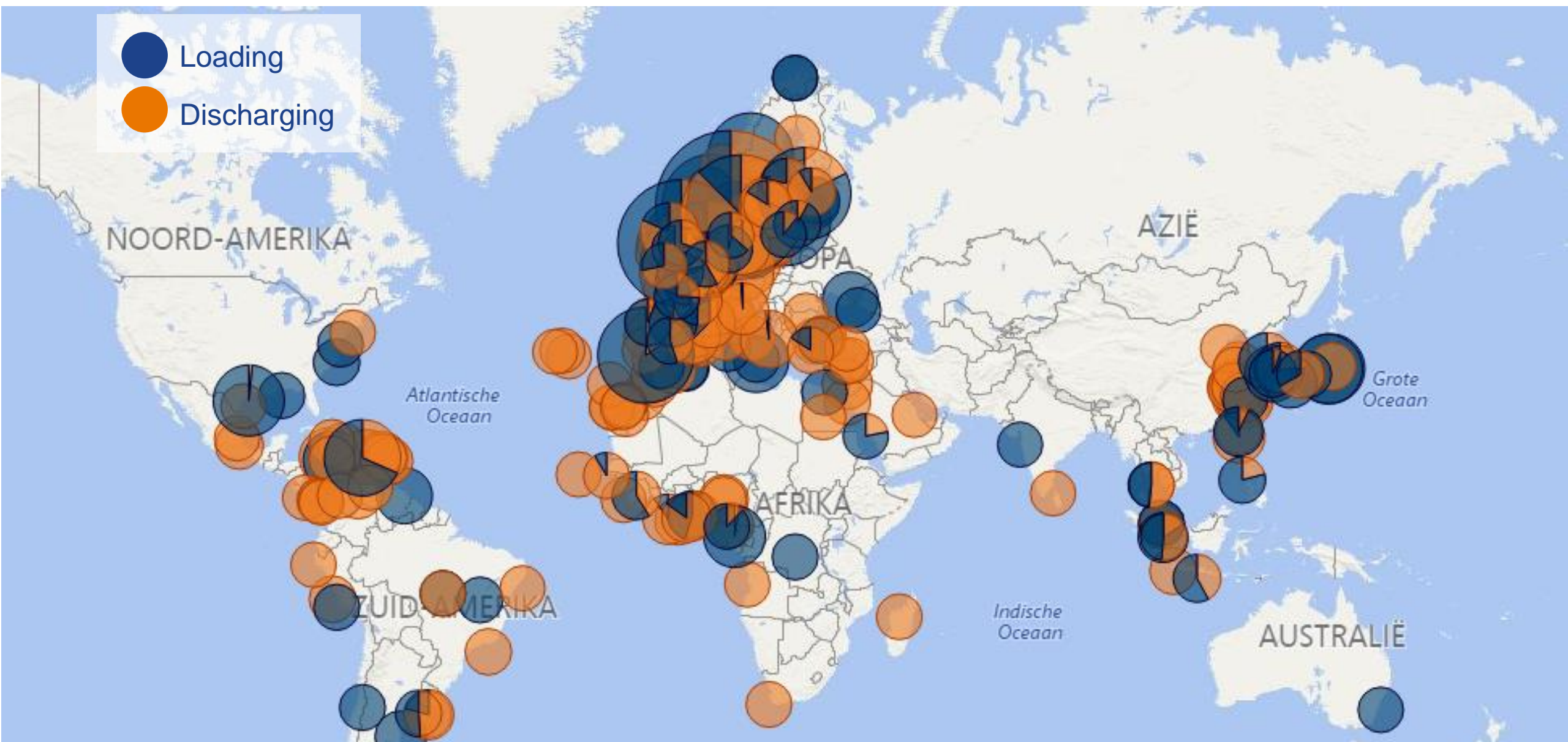


TECHNICAL OPERATION

WORLDWIDE



ANTHONY VEDER



SEGMENTS

Petrochemical / LPG



22



3,800 –
10,000

LNG



10



5,800 –
30,000

FUEL FIRST LNG CRUISESHIP



ANTHONY VEDER



LNG FUELED



ANTHONY VEDER





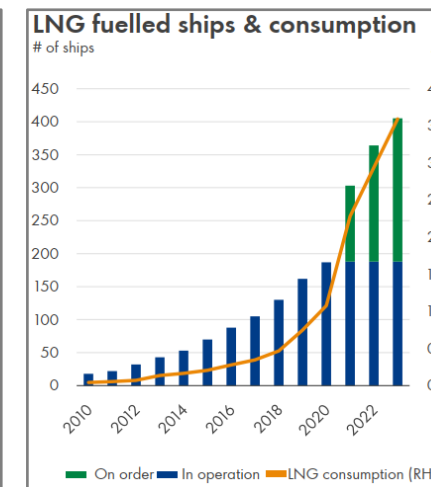
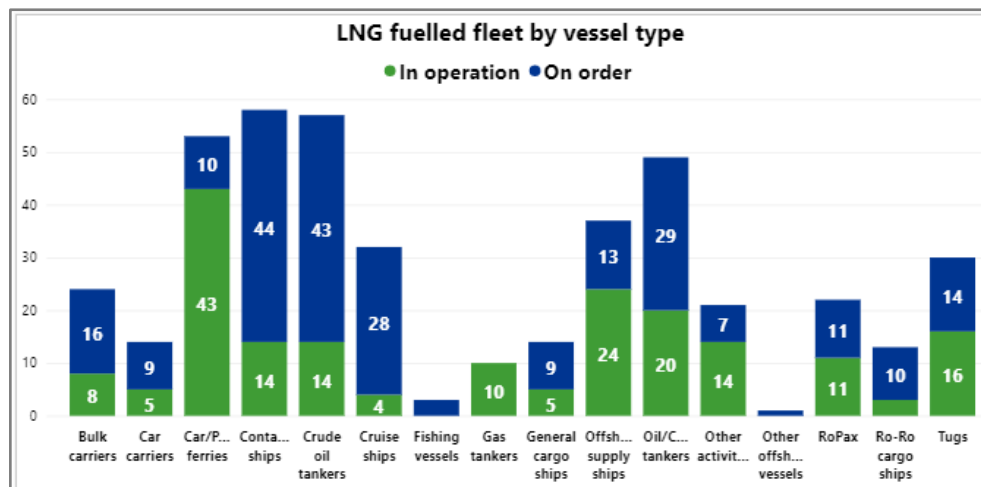
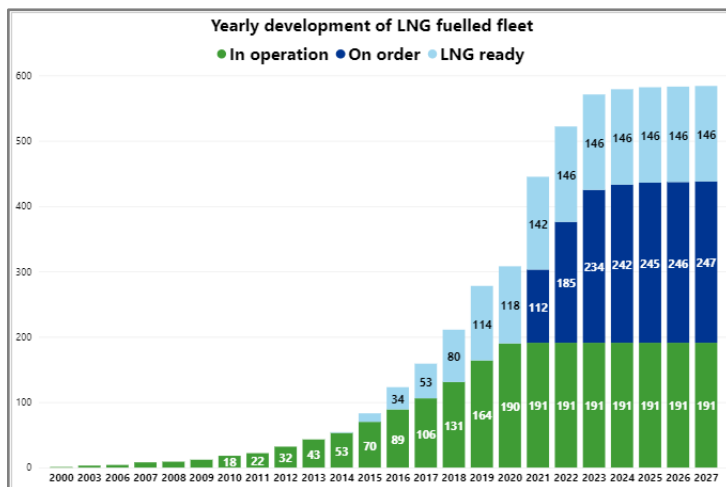
ANTHONY VEDER

HOW TO MAKE YOUR FLEET FUTURE PROOF WITH LNG?

ORDERBOOKS ARE FILLING WITH LNG FUELLED VESSELS, GROWING LNG BUNKER DEMAND IN 4 YEARS BY 250%

February 2021 alone saw 34 newbuild orders announced for LNG fuelled vessels in Tradewinds:

25/2	Shell sees demand for LNG bunkering accelerating	
18/2	Maran Tankers linked to order for LNG-fuelled VLCC quartet	4x VLCC
12/2	Zim charters 10 new LNG-fuelled boxships as Seaspan order spree goes on	10x 15,000 TEU boxships
12/2	NYK Line orders LNG-fuelled PCTC quartet in China	4x PCTC
8/2	Hapag-Lloyd seals \$890m green financing for new megaships	6x 23,500 TEU boxships
1/2	Three shipowners lined up for Shell's LNG-fuelled VLCCs at DSME	10x VLCC

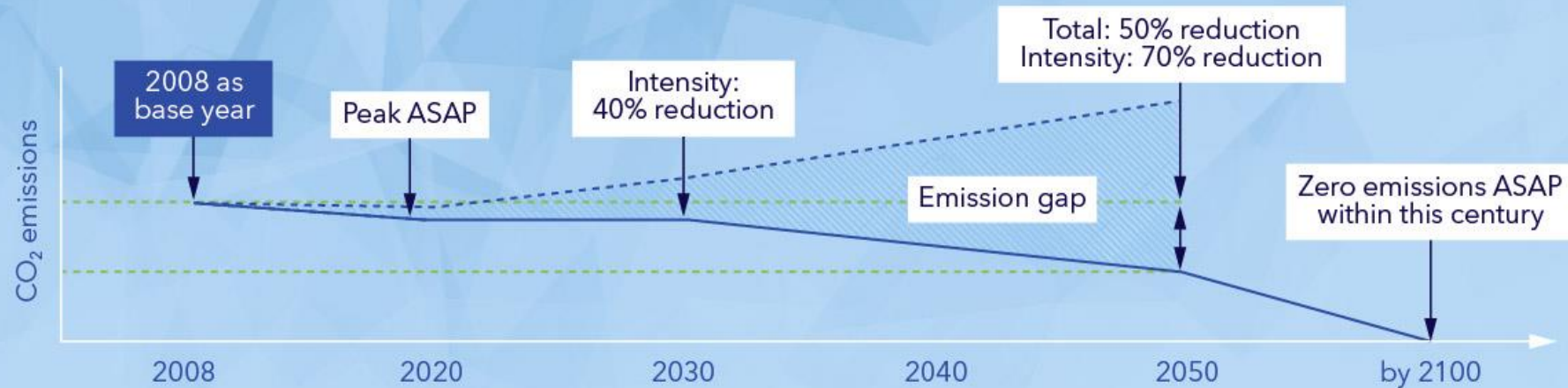


WITH LNG LONG TERM COMPLIANCE IMO ON GHG



ANTHONY VEDER

Initial IMO strategy on reduction of GHG emissions: Vision and ambitions



Short-term 2018-2023

- Tighter EEDI and SEEMP
- Energy-efficiency indicators
- ! ■ Speed reduction
- National action plans

Mid-term 2023-2030

- Energy-efficiency measures for new and existing ships, using new indicators
- ! ■ Carbon pricing / MBM
- Plan for low-carbon fuels

Long-term 2030 →

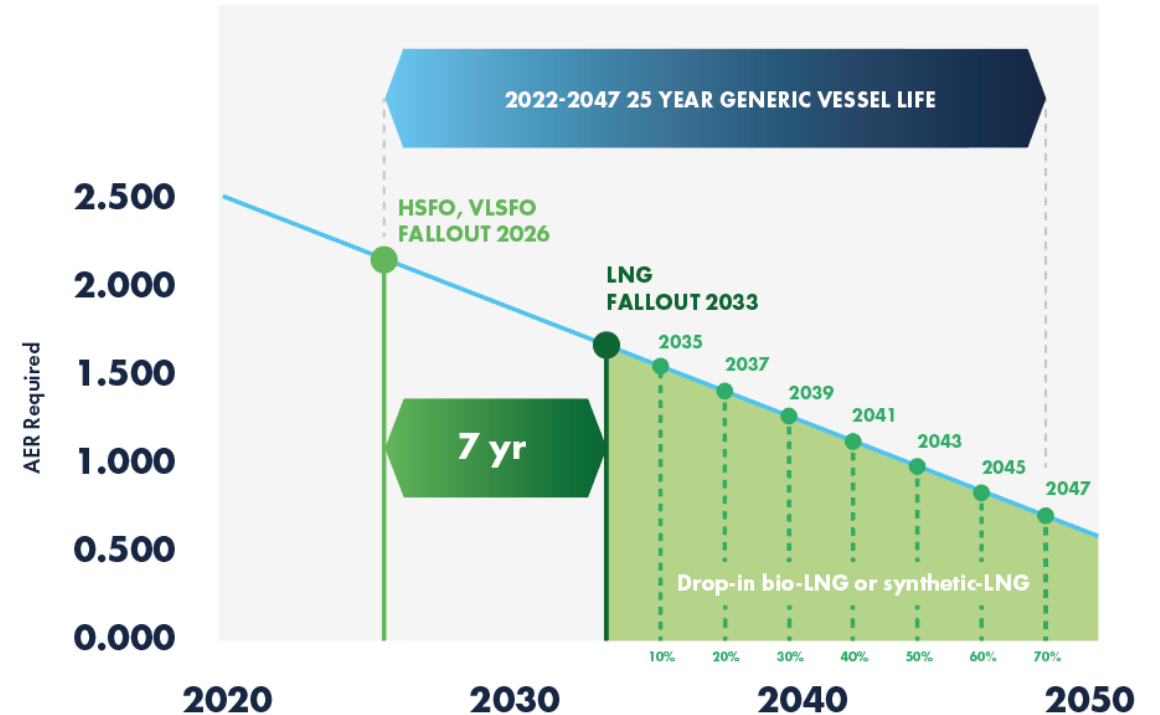
- ! ■ Development of zero-carbon fuels
- New/innovative emission-reduction mechanisms

WITH LNG SAFE INVESTMENT ON LONG TERM



ANTHONY VEDER

- Available and scalable:
 - 88 ports providing LNG as bunker fuel
 - There is sufficient supply to meet the demand
- Affordable
- Safe
- Technology maturity
- Compatible with future zero emission fuels as Bio-LNG and e-LNG
- Bankable (Poseidon Principles)
- Total cost of ownership



WITH LNG LONG RANGE



ANTHONY VEDER

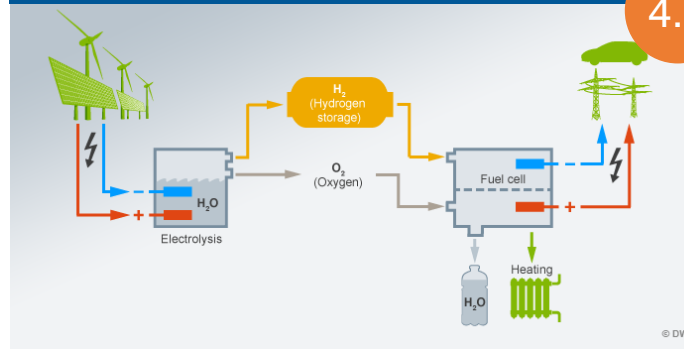
Heavy fuel oil plus SOx scrubber

1



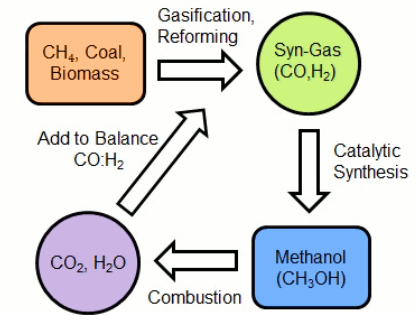
Hydrogen

4.6



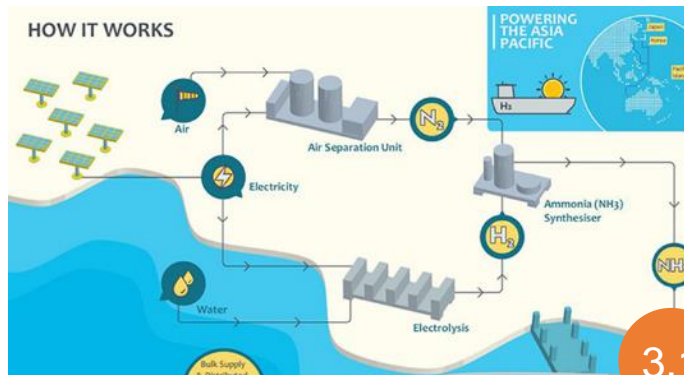
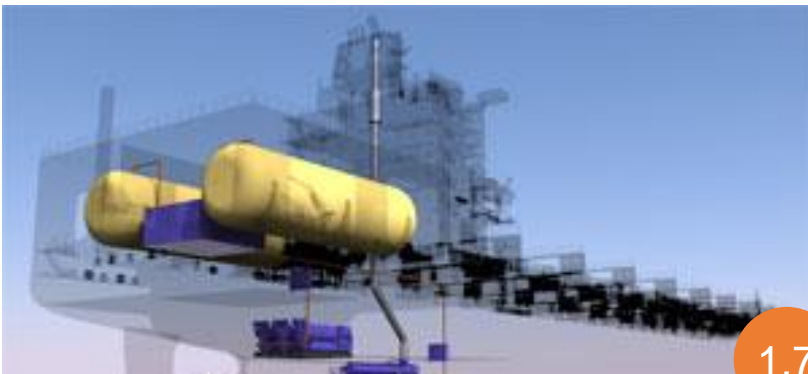
Methanol based on H2 or Syngas

2.5



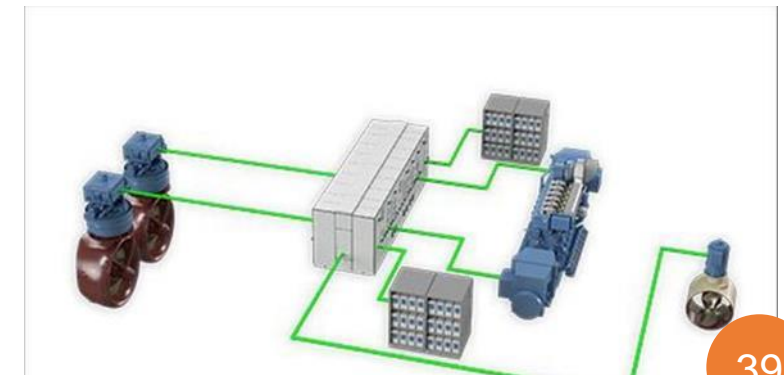
LNG (fossil, bio-, and e-)

1.7



3.1

Ammonia based on Hydrogen



39

Battery packs

CONCLUSION AND FINAL REMARKS



ANTHONY VEDER

1. Become member of SGMF
2. Compliance with IMO:
 - Non-compliance means compulsory corrective actions (e.g. slower steaming if less carbon intensive fuels are not available)
 - with LNG you lower your carbon intensity from the start
3. EU Emissions Trading System (ETS) Directive (MRV)
 - Emissions of CO₂ will be taxed
 - with LNG you lower your carbon intensity from the start
4. Further reductions in CO₂ possible over time by:
 - Development of bio- and e-fuels (of which LNG)
 - Use of CC(U)S on board using “cold” of LNG for positive energy balance
5. Select your engines carefully for lowest to zero methane slip
 - Hybrid propulsion solutions can reduce overall methane impact
6. Electrify your ship to be flexible with any type of energy source
7. Don't wait and take your responsibility know!
 - Reduce emissions SO_x, NO_x, PM and CO₂



QUESTIONS

